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Quality Engineering Test Report

SERIES: SP-150 150 WATTS SIGLE OUTPUT SWITCHING POWER SUPPLY

SAMPLE: A.SP-150-3.3 3.3V / 30A D.SP-150-12 12V /12.5A G.SP-150-24 24V /6.3A
B.SP-150-5 5V /30A E.SP-150-13.5 13.5V /11.2A H.SP-150-27 27V /5.6A
C.SP-150-7.5 7.5V /20A F.SP-150-15 15V /10A I.SP-150-48 48V /3.2A

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
1	AC INPUT VOLTAGE RANGE	I/P:TESTING SPEC:85~264VAC O/P:FULL LOAD	A:54V-267VAC	P
2	LINE REGULATION	I/P:85~264VAC SPEC: O/P:FULL LOAD A: ±0.5% B: ±0.5% C: ±0.5% D: ±0.5% E: ±0.5% G:±0.5% H: ±0.5% I: ±0.5%	A: 0% - 0% B: 0% - 0% C: 0% - -0.07% D: 0.049% - 0.049% E: -0.04% - -0.04% F: -0.04% - -0.04% G: 0% - -0.02% H: 0% - 0.02% I: -0.01% - -0.01%	P
3	LOAD REGULATION	I/P:230VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±1% B: ±1% C: ±1% D: ±0.5% E: ±0.5% F: ±0.5% G: ±0.5% H: ±0.5% I: ±0.5%	A: -0.75% - 0.75% B: -0.35% - 0.35% C: -0.20% - 0.15% D: -0.049% - 0% E: -0.04% - +0.04% F: 0.04% - 0.04% G: -0.02% - 0.05% H: 0.06% - -0.02% I: -0.15% - 0.14%	P
4	OUTPUT VOLTAGE TOLERANCE	I/P:85~264VAC SPEC: O/P:0% LOAD TO FULL LOAD A: ±2% B: ±2% C: ±2% D: ±2% E: ±2% F: ±2% G: ±1% H: ±1% I: ±1%	A: 0.75% - -0.75% B: -0.6% - 0% C: -0.45% - 0.08% D: -0.049% - +0.049% E: -0.04% - +0.04% F: 1.3% - 0.7% G: 0.128% - -0.07% H: -0.02% - 0.07% I: -0.02% - 0.18 %	P
5	RIPPLE & NOISE	I/P:230VAC SPEC: O/P: FULL LOAD A:100mV B:100mV C:100mV D:100mV E:100mV F:100mV G :150mV H:150mV I:250mV	A: 53mV B: 62mV C: 53mV D: 53mV E: 53mV F: 54mV G: 47mV H: 65mV I: 108mV	P
6	AC INPUT CURRENT	I/P:230VAC SPEC: 1.1A O/P:FULL LOAD	A:0.649A	P

NO	TEST ITEM	TEST CONDITION / SPECIFICATION	RESULT	VERDICT
7	MAX. INRUSH CURRENT	I/P:230VAC SPEC: 40A O/P:FULL LOAD	A:36.843A	P
8	O/P VOLTAGE ADJ.RANGE	I/P:230VAC SPEC: +10%~-5% O/P:MIN. LOAD A:3.1V~3.6V B:4.7V~5.5V C:7.12V~8.25V D:11.4V~13.2V E:12.8 V~14.8V F:14.2V~16.5V G:22.8V~26.4V H:25.6V~29.7V I:45.6V~52.8V	A:3.10V~3.81V B:4.44V~5.82V C:6.36V~8.94V D:10.34V~13.79V E:10.887V~15.014V F:12.37V~17.55V G:19.8V~27.8V H:19.81V~30.15V I:40.5V~53.7V	P
9	SET UP TIME	I/P:230VAC SPEC:600ms O/P:FULL LOAD	A:152mS	P
10	HOLD UP TIME	I/P:230VAC SPEC:20mS O/P:FULL LOAD	A:33.28mS	P
11	EFFICIENCY	I/P:230VAC SPEC: O/P: FULL LOAD A:67% B:75% C:79% D:80% E:80% F:81% G:83% H:84% I:84%	A: 68.02% B: 76.23% C: 80.5% D: 81.25% E: 81.61% F: 84% G: 83.6% H: 86.4% I: 84.5%	P
12	OVER LOAD PROTECTION	I/P:230VAC SPEC:105%~150% O/P:TESTING	A: 138% B: 123% C: 135% D: 129% E: 118% F: 125% G: 133% H: 124% I: 136%	P
13	OVER VOLTAGE PROTECTION	I/P:230VAC SPEC:110%~135% O/P: TESTING A:3.63~4.45 V B:5.5~6.75V C:8.25~10.12V D:13.2~16.2V E:14.8~18.2V F:16.5~20.2V G:26.4~32.4V H:29.7~36.4V I:52.8~64.8V	A: 4.10V B: 5.9V C: 9.08V D: 14.5V E: 16.98V F: 17.6V G: 29.0V H: 35.6V I: 57.8V	P
14	GROUND LEAKAGE CURRENT	I/P:240VAC SPEC: L-FG--<2.00mA N-FG--<2.00mA	A: L-FG:0.5mA N-FG:0.5mA	P
15	GROUNDING CONTINUITY	SPEC: FG--CHASSIS<0.1Ohms/2min	A 42mOhms	P
16	INSULATION RESISTANCE	SPEC: O/P-FG 500VDC / 100M Ohms MIN. I/P-O/P 500VDC / 100M Ohms MIN. I/P-FG 500VDC / 100M Ohms MIN.	A: O/P-FG >100MOhms I/P-O/P >100MOhms I/P-FG >100MOhms	P

PREVIOUS NEXT

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>TEST CONDITION / SPECIFICATION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>17</td><td>DIELECTRIC / WITHSTAND VOLTAGE</td><td>SPEC: I/P- O/P: 3000VAC/ 60 sec (10mA CUT-OFF)
I/P - FG: 1500VAC/60 sec (10mA CUT-OFF)
O/P - FG : 500VAC/60sec (10mA CUT-OFF)</td><td>A: I/P-O/P :3.6mA
I/P-FG :2.57mA
O/P- FG :2.18mA</td><td>P</td></tr>
<tr><td>18</td><td>BURN-IN TEST</td><td>I/P: 230VAC O/P:FULL LOAD
TA:24.7℃ BURN-IN DURATION : 14 hrs</td><td>E: NON BREAK</td><td>P</td></tr>
<tr><td rowspan="3">19</td><td rowspan="3">ENVIRONMENT TEST</td><td>1.LOW TEMPERATURE TEST
I/P：230 VAC O/P：100% LOAD
AMBIENT TEMPERATURE：-9.9℃</td><td>I :
AFTER 24 hrs POWER ON OK</td><td rowspan="3">P</td></tr>
<tr><td>2.HIGH AMBIENT TEMPERATURE FULL LOAD TEST
I/P：230VAC O/P：FULL LOAD
AMBIENT TEMPERATURE：53.4℃ with cooling FAN</td><td>I :
AFTER 14 hrs NON BREAK</td></tr>
<tr><td>3.HIGH HUMIDITY HIGH VOLTAGE ON/OFF TEST
I/P：272VAC O/P：FULL LOAD
AMBIENT TEMPERATURE：25℃
AMBIENT HUMIDITY：95%</td><td>I :
AFTER14.5hrs POWER ON/OFFNON BREAK</td></tr>
<tr><td>20</td><td>TEMPERATURE RISE TEST Trise OF PARTS</td><td colspan="2">B: I/P ：230VAC AFTER 2 hrs BURN-IN
O/P ：FULL LOAD TA：24.7℃ with cooling FAN
<table>
<tr><th></th><th>POSITION</th><th>P/N</th><th>TEMP</th><th>Trise</th></tr>
<tr><td></td><td>BD1</td><td>BRIDGE DIODE</td><td>46.5℃</td><td>21.8℃</td></tr>
<tr><td></td><td>Q2</td><td>MAIN TRANSISTOR</td><td>42.8℃</td><td>18.1℃</td></tr>
<tr><td></td><td>Q1</td><td>PFC TRANSISTOR</td><td>47℃</td><td>22.3℃</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER COIL</td><td>56℃</td><td>31.3℃</td></tr>
<tr><td></td><td>T1</td><td>MAIN TRANSFORMER CORE</td><td>58.1℃</td><td>33.4℃</td></tr>
<tr><td></td><td>D20</td><td>O/P DIODE</td><td>43.2℃</td><td>18.5℃</td></tr>
<tr><td></td><td>C42</td><td>O/P FILTER CAPACITOR</td><td>45.4℃</td><td>20.7℃</td></tr>
<tr><td></td><td>L2</td><td>O/P CHOCK</td><td>40.9℃</td><td>16.2℃</td></tr>
<tr><td></td><td>C5</td><td>I/P FILTER CAPACITOR</td><td>31.5℃</td><td>6.8℃</td></tr>
<tr><td></td><td>LF1</td><td>LINE FILTER COIL</td><td>29.1℃</td><td>4.4℃</td></tr>
<tr><td></td><td>D2</td><td>PFC DIODE</td><td>39.2℃</td><td>14.5℃</td></tr>
</table></td><td>P</td></tr>
<tr><td>21</td><td>LIFE CYCLE</td><td colspan="2">SUPPOSE C42 IS THE MOST CRITICAL COMPONENT WITH COOLING FAN
I/P：230VAC O/P：FULL LOAD Ta：25℃ Tc42：45.4℃ Life:380546hrs
I/P：230VAC O/P：FULL LOAD Ta：50℃ Tc42：75.2℃ Life:48232hrs</td><td>P</td></tr>
<tr><td>22</td><td>CRITICAL COMPONENT RECORD
(FOR QC INSPECTION REFERENCE ONLY)</td><td colspan="3">I :
FUSE :4A/250V GFE/GNA
BRIDGE DIODE : RS606 4A/800V GL
LINE FILTER :LF601
TRANSFOMER :TF-616 EI-33
OUTPUT DIODE :IR40L45CW 30A/40V ESAD83-004
OUTPUT CAPACITOR :ELNA 220uF/63V 105℃ RJH
INPUT CAPACITOR :HITACHI 1000uF/400V,85℃ HP3/USC
P.C.B :SP-150 CEM-3 20Z SS</td></tr>
</table>

PREVIOUS NEXT

DATE	SAMPLE	TEST RESULT	TEST	APPROVAL
19990519	RD SAMPLE 5V	PASS	H.C. LIOU	Max Lin
19990719	RD SAMPLE 5V,12V,24V,48V	PASS	H.C. LIOU	Max Lin
19991119	PRDUCTION SAMPLE 9911A32	PASS	C.C.CHEN	Max Lin
20000120	PRDUCTION SAMPLE A001B13 48V,24V	PASS	C.C.CHEN	Max Lin
20000308	PRDUCTION SAMPLE A003A05A 24V	PASS	VINCENT	Max Lin
20000408	PRDUCTION SAMPLE A004A09 12V,15V	PASS	VINCENT	Max Lin
20000627	PRDUCTION SAMPLE A006C03 3.3V	PASS	VINCENT	Max Lin
20000726	PRDUCTION SAMPLE A007C10E 13.5V	PASS	VINCENT	Max Lin
20000828	PRDUCTION SAMPLE A008C08 12V	PASS	VINCENT	Max Lin
20010327	PRDUCTION SAMPLE A103C03 12V	PASS	VINCENT	Max Lin
20020103	PRDUCTION SAMPLE A112D23 3.3V	PASS	VINCENT	Max Lin

PREVIOUS